

METRAVOLT 12D+L

Voltage and Continuity Tester with Phase, Polarity and Phase Sequence Testing per DIN EN 61243-3 / VDE 0682-401

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- Voltage tester:** Nominal voltage range
24 ... 1000 V AC/1500 V DC
Automatic power-up

Display range
0 ... 1200 V AC/1500 V DC
when switched on manually
- Resistance and Continuity tester:** 1 ... 1999 k Ω
acoustic signal up to 10 k Ω
- Phase tester:** Display of „POL“ on LCD panel
- Polarity tester:** Minus sign before displayed value
- Phase sequence tester:** LEDs \triangleleft \triangle indicate counter clockwise and clockwise rotation
- Display with background illumination**



CE

CAT IV



Applications

The METRAVOLT 12D+L is a 2-pole voltage tester with digital display combined with integrated continuity, phase, polarity and phase sequence testing. It allows for safe detection and measurement of AC and DC voltages within a range of 24 to 1000 V at frequencies of up to 4 kHz. Resistance can also be measured within a range of 0 to 1999 k Ω with the integrated continuity tester. Voltage and resistance values appear in digital format at the LCD. Additionally, three LEDs indicate dangerous contact voltage and phase sequence, another LED indicates resistance and a sound generator indicates continuity.

Features

Fully Automated Measuring Sequence

The voltage tester is switched on automatically as soon as a voltage of at least 24 V is applied. The respective voltage measuring range and voltage type are selected automatically. If interference voltages of greater than 24 V are detected, the instrument switches automatically from the continuity test to the voltage test.

The instrument is switched off automatically approximately 30 seconds after the last measurement in order to extend battery life.

Measured Value Storage

The displayed measured value can be “frozen” at the LCD by pressing the HOLD key.

Self-Test and Battery Monitoring

The self-test checks all display elements and device functions. A signal is generated automatically if the battery requires replacement.

Rugged Housing

The impact resistant, dust-tight housing makes the instrument virtually indestructible. The display is protected by means of an unbreakable cover. The instrument can also be used in precipitation thanks to IP 65 protection.

High Safety Levels

Excellent electrical safety is achieved by means of series resistors integrated into both test probes.

Applicable Regulations and Standards

| | |
|---|--|
| IEC 61243-3:2014 + Corr.:2015 DIN EN 61243-3 VDE 0682-401:2015-08 | Live working – Voltage detectors – Part 3: Two-pole low-voltage type |
| EN 60529 VDE 0470-1 | Test instruments and test procedures Protection provided by enclosures (IP code) |
| DIN EN 61326-1 VDE 0843-20-1 | Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements |

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Voltage and Continuity Tester with Phase, Polarity and Phase Sequence Testing

Technical Data

| Measured Quantity | Measuring Ranges ²⁾ (Automatic Range Selection) | Resolution | Frequency Range / Measuring Current | Intrinsic Uncertainty | |
|-------------------|---|------------------------|-------------------------------------|-------------------------|------------------------|
| U- | 0.10 V ... 8.99 V 9.0 V ... 99.9 V 100 V ... 1500 V | 0.01 V 0.1 V 1 V | — | ±(1.5% rdg. + 3 digits) | |
| U~ TRMS | 1.0 V ... 99.9 V 100 V ... 1200 V | 0.1 V 1 V | 15 Hz ... 1.8 kHz | ±(1.5% rdg. + 3 digits) | |
| U~ ¹⁾ | 15 V ... 99.9 V 100 V ... 499 V | | > 1.8 kHz ... 10 kHz | | ±(15% rdg. + 3 digits) |
| | 500 V ... 1200 V | | > 1.8 kHz ... 4 kHz | | |
| R | 0 kΩ ... 49 kΩ 50 kΩ ... 1999 kΩ | 1 kΩ | 5 μA 1 μA | ±(5% rdg. + 3 digits) | |

¹⁾ TRMS value, sinusoidal

²⁾ Display as from 0,0 V

Key: rdg. = reading (measured value)

Nominal Conditions of Use

| | |
|-------------------------|--|
| Nominal voltage range | 24 ... 1000 V AC / 1500 V DC (Auto on from 24 V onwards) |
| Overvoltage range | > 1000 V AC ... 1200 V AC (beyond the limit specified in IEC 61243-3) |
| Nominal frequency range | 15 Hz ... 10 kHz < 500 V 15 Hz ... 4 kHz > 500 V |
| Input impedance | approx. 465 kΩ at 50 V/50 Hz approx. 320 kΩ at 1000 V AC approx. 710 kΩ at 1000 V DC |
| Current | 3.2 mA at 1000 V AC, 1.4 mA at 1000 V DC |
| On-time | 2 minutes |



LEDs

| | |
|--------------------|------------------------------------|
| LV display (round) | red as from ±50 V AC and 120 V DC |
| green square LED Ω | continuity up to 1999 Ω and diodes |
| 2 triangular LEDs | for phase sequence left/right |

Digital Display

| | |
|------|---|
| Type | LCD, 7-segment characters, 3½ places, for V or kΩ measurement as well as voltage type ~/DC and polarity, with background illumination |
|------|---|

| | |
|------------------|---------------------------|
| Display range | 0 ... 1999 digits |
| Overflow display | “OL” appears |
| Measuring rate | 3 measurements per second |

Power Supply

| | |
|--------------|--|
| Battery | 9 V flat block battery zinc-carbon battery per IEC 6 F22, alkaline manganese cell per IEC 6 LR61, or equivalent rechargeable NiMH battery |
| Battery test | The battery status is symbolized by a 3-stage battery indicator „“. |

Electrical Safety

| | |
|----------------------------|--------------------------------------|
| Measurement category | CAT IV 600 V CAT III 1000 V |
| Surge withstand capability | > 12 kV (1.2 / 50 μs) (type testing) |
| Test voltage | 6 kV |

Electromagnetic Compatibility

| | |
|-----------------------|-------------------------|
| Interference emission | EN 61326-1:2013 class B |
| Interference immunity | EN 61326-1:2013 |

Ambient Conditions

| | |
|-----------------------|-----------------|
| Operating temperature | -10 ... + 55 °C |
| Relative humidity | max. 85 % |
| Elevation | max. 2000 m |

Mechanical Design

| | |
|-------------------------------------|---|
| Protection | IP 65 |
| Housing | Impact-resistant, dust-proof plastic housing with unbreakable display cover |
| Connector cable between test probes | PUR sheathed cable, 1000 V, 1 m |
| Dimensions | Test probe with display panel: 62 × 240 × 39 mm |
| Weight | 270 g (including battery) |

Standard Equipment

- 1 Voltage tester
- 1 Operating instructions
- 1 Battery

Order Information

| Designation | Type | Article Number |
|---|-----------------|----------------|
| Voltage and continuity tester with phase, polarity and phase sequence testing | METRAVOLT 12D+L | M630G |

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